MX3W-V

User's Guide

Printed in Taiwan

PART NO.:

DOC. NO.: MX3WV-1-E9910A

MX3W-V Motherboard

User's Guide

Document Number : **MX3WV-1-E9910A**
Model and revision : **For MX3W-V rev 1.xx**
Manual version : **English, rev A**
Release Date : **Oct. 8, 1999**

More help for latest information:

Taiwan	***http://www.aopen.com.tw***
USA	***http://www.aopenusa.com***
Europe	***http://www.aopen.nl***

Copyright

Copyright ? 1999 by this company. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, manual or otherwise, without the prior written permission of this company.

Disclaimer

This company makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties, merchantability or fitness for any particular purpose. Any software described in this manual is sold or licensed "as is". Should the programs prove defective following their purchase, the buyer (and not this company, its distributor, or its dealer) assumes the entire cost of all necessary servicing, repair, and any incidental or consequential damages resulting from any defect in the software. Further, this company reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

Intel and Pentium are registered trademarks of Intel Corporation.

XT/AT is a registered trademark of International Business Machines Corporation.

AMI is a registered trademark of American Megatrends Inc.

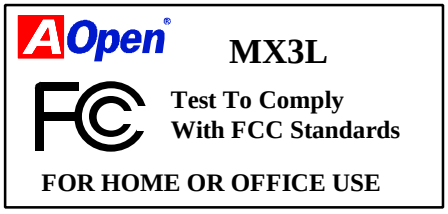
AWARD is a registered trademark of Award Software Inc.

Other brand and product names are trademarks and/or registered trademarks of their respective holders.

FCC Class B Radio Frequency Declaration of Conformity

This equipment has been tested and found to comply with the limits for a Class B Subassembly -CPU Board device, pursuant to Part 15 of FCC Rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.

Equipment Classification	: FCC Class B Subassembly - CPU Board
Type of Product	: Intel Celeron PPGA Micro ATX Motherboard
Chipset(s)	: Intel 82440LX



The limits of FCC Part 15 Class B are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with emission limits.

Organization

Chapter 1, **Overview**, covers the introduction and specifications of the system board and special features.

Chapter 2, **Hardware Installation**, describes hardware jumpers, connectors and memory configuration. There are user friendly drawings to locate jumper and connector.

Chapter 3, **AWARD BIOS**, explains the system BIOS and tells how to configure the system by setting the BIOS parameters.

Conventions

The following conventions are used in this manual:

`Text entered by user, default settings, recommended selections`	Represent text input by the user, default settings and recommended selections
<Enter>, <Tab>,<Ctl>, <Alt>, <Ins>, <Del>, etc	Represent the actual keys that you have to press on the keyboard.

Note:
Gives bits and pieces of additional information related to the current topic.

Warning:
Alerts you to any damage that might result from doing or not doing specific actions.

Caution:
Suggests precautionary measures to avoid potential hardware or software problems.

Important:
Reminds you to take specific action relevant to the accomplishment of the procedure at hand.

Tip:
Tells how to accomplish a procedure with minimum steps through little shortcuts.

Contents

chapter 1 overview

1.1 Specifications....4
1.2 APM Suspend to Hard Drive....5
1.3 Zero Voltage Wake On Modem....8
1.4 System Voltage Monitoring....10
1.5 Fan Monitoring....10
1.6 CPU Thermal Protection....11
1.7 Battery-less Design....11

chapter 2 Hardware Installation.... 1

2.1 Jumper and Connector Locations....2
2.2 Jumpers....4
2.2.1 Selecting the CPU Frequency....4
2.2.2 Setting the CPU Voltage....5
2.2.3 Clearing the CMOS....5
2.2.4 Onboard Audio....6
2.2.5 KB/MS Wakeup....6
2.3 Connectors....7
2.3.1 Power Cable....7
2.3.3 Fan…….....7
2.3.4 PS/2 Mouse....8
2.3.5 Keyboard....8
2.3.6 Serial Devices (COM1/COM2)....8
2.3.7 Printer….....9
2.3.8 USB Device....9
2.3.9 Floppy Drive....10
2.3.10 IDE Hard Disk and CD ROM....10

2.3.11 Panel Connector 11
2.3.12 IrDA Connector 12
2.3.13 Wake On Modem Connector 13
2.3.14 Wake On LAN Connector 13
2.3.15 CD Audio Connector 14
2.3.16 Mono In/Mic Out Connector 14
2.4 Configuring the System Memory 15
2.5 Onboard Audio 18
2.5.1 Setting Up in Windows 95/98 20
2.5.2 Setting Up in NT4.0 21

chapter 3 Award BIOS 1
3.1 Entering the Award BIOS Setup Menu 2
3.2 Standard CMOS Setup 3
3.3 BIOS Features Setup 6
3.4 Chipset Features Setup 10
3.5 Power Management Setup 18
3.6 PNP/PCI Configuration Setup 25
3.7 Load Setup Defaults 30
3.8 Load Turbo Defaults 30
3.9 Integrated Peripherals 31
3.10 Password Setting 38
3.11 IDE HDD Auto Detection 38
3.12 Save & Exit Setup 38
3.13 Load EEPROM Default 39
3.14 Save EEPROM Default 39
3.15 Exit without Saving 39
3.16 NCR SCSI BIOS and Drivers 39
3.17 BIOS Flash Utility 40

Chapter 1

Overview

MX3W-V is a new generation Socket 370 based system board that utilizes Intel **810** AGPset on **Micro ATX** PCI/ISA platform. This AGPset is designed for Celeron PPGA CPU, and supports new architectures such as high speed **AGP** graphic port, **PC100 SDRAM**, **AMR slot, Ultra DMA 33/66**, **Bus master IDE**, **PCI 2.2** and **USB** port. It has **two Dual in-line Memory Module (DIMM)** slots that allow to install PC100 SDRAMs and expand up to a maximum of **512MB**. Also, MX3W-V uses **4M bit Flash ROM** BIOS to reserve for future new functions.

In addition to the above features, MX3W-V also implements many special features as follows.

Jumper-less Design Celeron PPGA VID signal and SMbus clock generator provide CPU voltage auto-detection and allows the user to set the CPU frequency through the CMOS setup, therefore no jumpers or switches are used. The correct CPU information is saved into the EEPROM. With these technologies, the disadvantages of the Pentium based jumper-less designs are eliminated. There will be no worry of wrong CPU voltage detection and no need to re-open the housing in case of CMOS battery loss. The only jumper left is to clear the CMOS, which is a safety hook if you forget the password.

Battery-less This motherboard implements EEPROM and a special circuit (patent applied) that allows you to save your current CPU and CMOS Setup configurations without the need of a battery. The RTC (real time clock) can also keep running as long as the power cord is plugged. If you lose your CMOS data by accident, you can just reload the CMOS configurations from EEPROM and the system will recover as usual.

ACPI Suspend to DRAM You can resume your original work directly from DRAM without going through the Win98 booting process and run your application again. Suspend to DRAM saves your current work into the system memory.

ACPI Suspend to Hard Drive The conventional "Suspend to Hard Drive" function is a private design of AOpen motherboards, the requirement to run it is a BIOS revision and correct chipset that supports this function. However, nowadays "Suspend to Hard Drive" has been become widely known as the "S4 - Hibernation" state defined in the ACPI specification; in this case not only the BIOS itself but also the operation system (i.e. Windows98) and even the display card are involved in the execution of this function. With regard to how to implement this function, please refer to section “1.3 ACPI Suspend to Hard Drive”.

0V Wake On Modem In conjunction with ATX soft power On/Off, it is possible to have the system totally power off and wakeup to automatically answer a phone call to serve as an answering machine or to send/receive a fax. The most important break through is not only an externally cased modem but also an internal modem card can be used to support Wake On Modem. This motherboard and MP56 internal modem card implement a special circuit (patent applied) to make sure the modem card works properly without any power.

Wake On LAN This feature is very similar as the Wake On Modem feature, but it is through a local area network. To use the Wake On LAN function, you must have a network card that supports this feature and have installed proper network management software, such as ADM.

Wake On RTC Timer The Wake Up Timer is more like an alarm, which wakes up and powers on your system at a pre-defined time for a specific application. It can be set to wake up everyday or on specific date within a month. The date/time is accurate to within a second.

Wake On Keyboard This function allows you to power on your system by clicking the hot key that you specified. Besides, you also may disable the function of power button and let the system can only be powered on through the preset keys (like a password).

Wake On Mouse This function allows you power on the system by clicking a specified mouse button twice successively.

AC Power Auto Recovery A traditional ATX system should remain at power off stage when AC power resumes from power failure. This design is inconvenient for a network server or workstation, without an UPS, that needs to keep power-on. This motherboard implements an AC Power Auto Recovery function to solve this problem. In BIOS Setup settings if this item is set to “Enabled” the system will automatically power-on after AC power resumes.

High Efficient Synchronous Switching Regulator Most of the current switching designs are Asynchronous mode, which from the technical point of view, still consumes very high power as well as heat. MX3W-V implements

high efficient synchronous switching design that the temperature of MOS FET is far less than Schottky diode of asynchronous design.

Over Current Protection The Over Current Protection was very popular implemented on the Baby AT or ATX 3.3V/5V/12V switching power supply. However, the new generation Celeron PPGA CPU uses different voltage that have regulator to transfer 5V to CPU voltage (for example, 2.0V), and make 5V over current protection useless. MX3W-V with switching regulator onboard support CPU over current protection, in conjunction with 3.3V/5V/12V power supply provide the full line over current protection.

CPU and Housing Fan Monitoring This motherboard has one more "fan monitoring" function to prevent system overheat. There are two fan connectors. One is for the CPU and the other can be an extra housing fan. The system will report an alarm fan malfunction through utility software such as Hardware Monitoring Utility.

CPU Thermal Protection MX3W-V has a special thermal detection circuit to have warning through application software when the temperature is higher than a predefined value.

System Voltage Monitoring Further more, MX3W-V implements a voltage monitoring system, As you turn on your system, this smart design will continue to monitor your system working voltage. If any of the system voltage is over the component's standard. There will be alarm though utility software such as Hardware Monitor utility (Small Icon for Hardware Monitoring) for a warning to user.

Full-range CPU core voltage This motherboard supports the CPU core voltage from 1.3V to 2.05V, that can be applied to various CPU type in future.

Resetable Fuse This motherboard implements resetable fuses to prevent any accidental short circuit caused by keyboard or USB devices hot plug.

FCC DoC certificate MX3W-V has passed FCC DoC test. The radiation is very low, you can use any kind of housing.

Powerful Utility Software AOpen Bonus Pack CD disc contains many useful utilities, such as Norton Antivirus, AOchip, Hardware Monitoring utility, and Suspend to Hard Drive utility.

Note: *This motherboard is battery-less, that means the RTC (real time clock) can keep running without battery as long as the power cord is plugged. But in case of power failure or the power cord unplugged, you need to reset date and time from "Standard CMOS Setup" section of BIOS Setup. For more information, please see "Chapter 3 BIOS Setup".*

1.1 Specifications

Form Factor	Micro ATX
Board Size	244 mm x 220 mm
CPU	Celeron PPGA
System Memory	168-pin DIMM x2, maximum 512 PC100 SDRAM.
Chipset	Intel 810 AGPset
Onboard AGP	Intel I752
Audio CODEC	AD1881
Expansion Slots	PCI x3 and AMR x1
Serial Port	Two serial ports UART 16C550 compatible, and the 3rd UART for IR function.
Parallel Port	One parallel port supports standard parallel port (SPP), enhanced parallel port (EPP) or extended capabilities port (ECP).
Floppy Interface	Floppy interface supports 3.5 inches drives with 720KB, 1.44MB or 2.88MB format or 5.25 inches drives with 360KB, 1.2MB format
IDE Interface	Dual-channel IDE interface support maximum 4 IDE hard disks or CDROM, mode 4 , bus master hard disk drives and Ultra DMA 33/66 mode hard drives are also supported.
USB Interface	Two USB ports supported by USB bracket, the BIOS also supports USB driver to simulate legacy keyboard.
PS/2 Mouse	Mini-Din PS/2 mouse connector onboard.
Keyboard	Mini-Din PS/2 keyboard connector onboard.
RTC and Battery	RTC within Intel ICH chipset. Lithium (CR-2032) battery is an option, no battery is needed if power cord is plugged.
BIOS	AWARD Plug-and-Play, 4M bit Flash ROM BIOS.

1.2 ACPI Suspend to Hard Drive

For a detailed installation procedure please refer to the following procedure to enable ACPI Suspend to Hard Drive on the AOpen MX3W-V motherboard. First please check if your system meets the following requirements, then follow the procedure step by step.

System Requirement

1. AOZVHDD.EXE 1.30b or later (http://www.aopen.com.tw/tech/mbdrv/default.htm#Suspend to Hard Disk Drivers).
2. Delete config.sys and autoexec.bat.

I. Fresh installation

1. Execute "Setup.exe /p j" to install Windows 98.
2. After Windows 98's installation is completed, go to Control Panel --> Power Management.
   a. Set "Power Schemes -> System Standby" to "Never".
   b. Click on "Hibernate" and select "Enable Hibernate Support" then "Apply".
   c. Click on the "Advanced" tab, you'll see "Hibernate" on "Power Buttons". Note that this option will only be seen after step b mentioned above has been completed, otherwise only "Standby" and "Shutdown" will be shown. Select "Hibernate" and "Apply".
3. Run AOZVHDD utility.
   a. If you assign the whole disk to your Win 98 system (FAT 16 or FAT 32), please run "aozvhdd /c /file" in DOS mode. Please remember sufficient free space has to be reserved in the disk, e.g. if you have 64 MB DRAM and 16 MB VGA card installed, the system needs at least 80 MB free space. The utility will locate the space automatically.
   b. If you assign an individual partition for Win 98, please run "aozvhdd /c /partition". Of course, the system needs to provide unformatted an empty partition.
4. Reboot system.

5. You've already implemented ACPI with Suspend-to-Harddisk. Click "Start -> Shut Down -> Standby" then the screen will go off immediately. And 1 minute or so will be taken for the system to save what's in the memory to the harddrive; the larger the memory size the longer this process will take.

II. Changing from APM to ACPI (Windows 98 only)

1. Run "Regedit.exe"
   a. Go through the following path
      HKEY_LOCAL_MACHINE
        SOFTWARE
          MICROSOFT
            WINDOWS
              CURRENT VERSION
                DETECT
   b. Select "ADD Binary" and name it as "ACPIOPTION".
   c. Right click and select Modify, add "01" after "0000" to make it "0000 01".
   d. Save changes.
2. Select "Add New Hardware" under Control Panel. Allow Windows 98 to detect new hardware. (It will find "ACPI BIOS" and remove "Plug and Play BIOS")
3. Reboot system.
4. Clean boot into DOS and run "AOZVHDD.EXE /C /File"

III. Changing from ACPI to APM

1. Run "Regedit.exe"
   a. Go through the following path
      HKEY_LOCAL_MACHINE
        SOFTWARE
          MICROSOFT
            WINDOWS
              CURRENT VERSION
                DETECT
                  ACPI OPTION

b. Right click and select Modify, change "01" to "00" to make it "0000 02".

<Note> "02" means Windows 98 is ACPI acknowledged but disable ACPI function.

c. Save changes.

2. Select "Add New Hardware" under Control Panel. Allow Windows 98 to detect new hardware. (It will find "Plug and Play BIOS" and remove "ACPI BIOS")
3. Reboot system.
4. Run "Add New Hardware" again and it will find "Advanced Power Management Resource".
5. Click "OK".

1.3 ACPI Suspend to DRAM

This motherboard supports ACPI Suspend to DRAM function. With this function, you can resume your original work directly from DRAM without going through the Win98 booting process and run your application again. Suspend to DRAM saves your current work into the system memory. To implement ACPI Suspend to DRAM, please follow the procedures as below.

System Requirement

1. An ACPI OS is required. Currently, Windows 98 is the only choice. (Please refer to 1.2 for details.)
2. The Intel INF Update Utility and the AGP driver must be installed properly.

Procedures

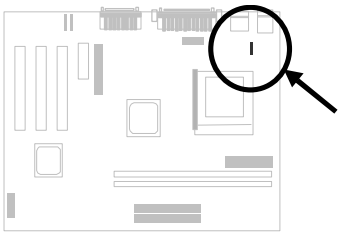
1. Changed the following BIOS settings.

   BIOS Setup ✍ Power Management ✍ ACPI Function: Enabled.

   BIOS Setup ✍ Power Management ✍ ACPI Standby: S3.

2. Go to Control Panel --> Power Management. Set “Power Buttons” to “Standby”.
3. Press power button or standby button to wake up the system.

1.4 Wake On Keyboard/Mouse



This function allows you to power on your system by clicking a hot key or a mouse button that you specified. Besides, you can also disable the function of the power button and only the preset keys (like a password) can boot your system.

Please follow the procedure below to enable Wake on Keyboard/Mouse function.

1. Set JP28 at pin 2-3 is to enable this function
2. Go to BIOS Setup ✍ Integrated Peripherals ✍ Power On Function. You can select various wakeup modes. For details, please refer to “Chapter 3 AWAED BIOS”
3. Save CMOS setup and Exit.
4. **Successfully boot your system to Windows or DOS.**
5. Now you can proceed the normal shutdown and next time you can use this function to boot your system.

***Caution**: To implement this function, the 5V Stand By current of ATX power supply must be greater than 800mA.*

***Caution**: Wake On Mouse function applies to PS/2 mouse only*

***Caution:** The mouse can't be moved between double clicking.*

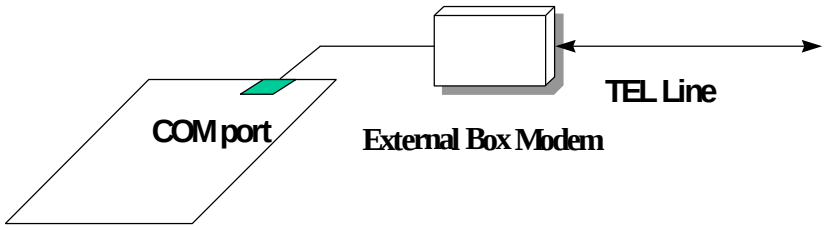
***Caution**: If you set a Password but forget it, please clear CMOS.*

***Caution**: If you want to use Wake On Mouse function in DOS, it is necessary to install the DOS driver of the mouse.*

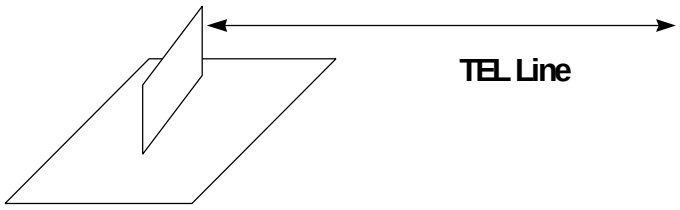
1.5 Zero Voltage Wake On Modem

The Wake on Modem discussed here is to wakeup from true power off (identified by fan of power supply is off), This motherboard still supports traditional green PC suspend mode but it is not discussed here.

With the help ATX soft power On/Off, it is possible to have system totally power off (The traditional suspend mode of power management function does not really turn off the system power supply), and wakeup to automatically answer a phone call such as answering machine or to send/receive fax. You may identify the true power off by checking fan of your power supply. Both external box modem and internal modem card can be used to support 0V Wake On Modem, but if you use external modem, you have to keep the box modem always power-on. AOpen MX3W-V and internal modem card implement special circuit (patent applied) and make sure the modem card works properly without any power. We recommend you choose AOpen modem card (For example, FM56-P, FM56-H, etc.) for 0V Wake On Modem applications.



External Modem Wake Up



Internal Modem Card Wake Up (such as FM56-P)

For Internal Modem Card (AOpen FM56-P):

1. Go into BIOS setup, Power Management ✍ 0V Wake On Modem, select Enabled.
2. Setup your application, put into Windows 95.
3. Turn system power off by soft power switch.
4. Connect 4-pin Modem Ring-On cable from FM56-P RING connector to MX3W-V connector WKUP.
5. Connect telephone line to FM56-P. You are now ready to use Wake On Modem.

For External Box Modem:

1. Go into BIOS setup, Power Management ✍ 0V Wake On Modem, select Enabled.
2. Setup your application, put into Windows 95 Start Up.
3. Turn system power off by soft power switch.
4. Connect RS232 cable of external box Modem to COM1 or COM2.
5. Connect telephone line to external box Modem. Turn on Modem power (you must keep Modem power always on). You are now ready to use Wake On Modem.

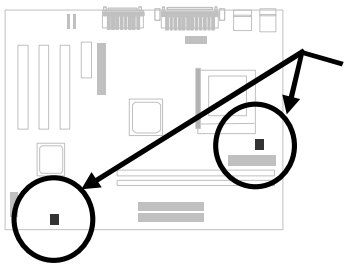
Tip: *External 0V Wake On Modem signal is detected through COM1 or COM2. Internal modem card wake up signal is detected through cable from connector RING (on modem card) to WKUP (on mainboard).*

Note: *If you use external modem, the power of external modem must be kept on to receive signal from telephone line. Internal modem card has no such limitation.*

1.6 System Voltage Monitoring

This motherboard implements a voltage monitoring system. As you turn on your system, this smart design will continue to monitor your system's working voltage. If any of the system's voltage is over the component's standard there will be an alarm through application software such as the Hardware Monitoring Utility to warn the user. The system voltage monitoring function monitors CPU core voltage. It is automatically implemented by the BIOS and Hardware Monitoring Utility (the program's file name is like aohwxxx.exe, where xxx means the version number), no hardware installation is needed.

1.7 Fan Monitoring



There are two fan connectors, one is for the CPU, and the other can be a housing fan. The fan monitoring function is implemented by connecting a fan to the 3-pin fan connector **CPUFAN1** or **FAN1** and installing the Hardware Monitoring Utility.

1.8 CPU Thermal Protection

This motherboard implements special thermal protection circuits. When temperature is higher than a predefined value, there will be warning through application software such as the Hardware Monitoring utility to notify the user. It is automatically implemented by the BIOS and the Hardware Monitoring Utility, no hardware installation is needed.

1.9 Battery-less Design

To preserve the earth, AOpen MX3W-V implements the battery-less motherboard design. There is no need to have battery for RTC (real time clock) and CMOS Setup as long as ATX power cable is plugged. In case of the AC power is shutdown or power cord is removed by accident, the CMOS Setup and system configuration can be restored from EEPROM, only the system clock needed to be re-set to current date/time.

For the convenience of end user, MX3W-V still shipped with one Lithium (CR-2032) battery. If you prefer to use battery, you can still insert it into battery socket. The RTC will still keep running even power cord is removed.

Chapter 2

Hardware Installation

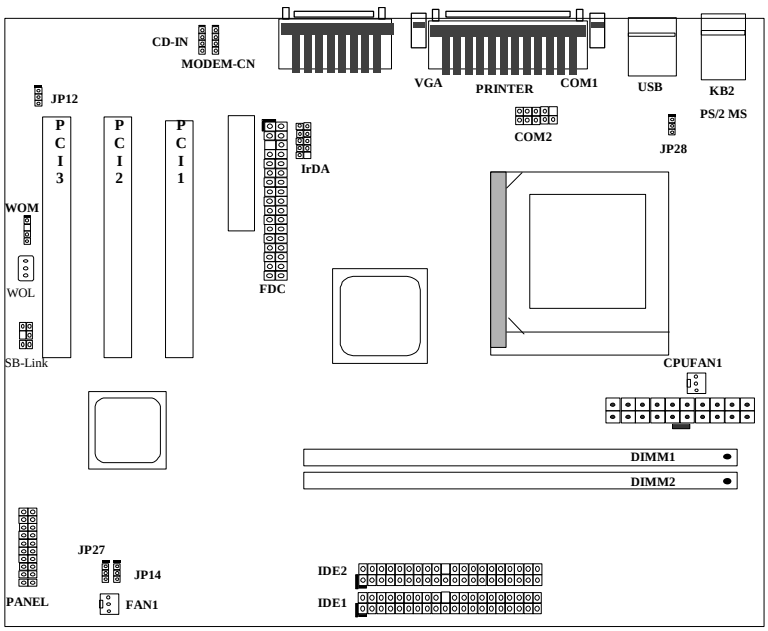
This chapter gives you a step-by-step procedure on how to install your system. Follow each section accordingly.

Caution: *Electrostatic discharge (ESD) can damage your processor, disk drives, expansion boards, and other components. Always observe the following precautions before you install a system component.*

1. *Do not remove a component from its protective packaging until you are ready to install it.*
2. *Wear a wrist ground strap and attach it to a metal part of the system unit before handling a component. If a wrist strap is not available, maintain contact with the system unit throughout any procedure requiring ESD protection.*

2.1 Jumper and Connector Locations

The following figure shows the locations of the jumpers and connectors on the system board:



Jumpers:

JP12:	Enable/Disable Onboard Audio
JP14:	Clear CMOS
JP27:	SPK Out
JP28:	Enable/Disable KB/MS Wake Up

Connectors:

PS2:	PS/2 mouse connector
KB:	PS/2 keyboard connector
COM1:	COM1 connector
COM2:	COM2 connector
PRINTER:	Printer connector
PWR2:	ATX power connector
USB:	USB connector
FDC:	Floppy drive connector
IDE1:	IDE1 primary channel
IDE2:	IDE2 secondary channel
CPUFAN1:	CPU fan connector
CPU1:	Housing fan connector
IrDA:	IrDA (Infrared) connector
PANEL:	Front panel (Multifunction) connector
CD-IN:	CD-audio connector
MODEM-CN:	Mono in (Pin 1-2) and Mic out (Pin 3-4)
WOM:	Wake On Modem connector
WOL:	Wake On LAN connector
SB-LINK:	Sound Blaster Link

2.2 Jumpers

With the help of Celeron PPGA VID signal and SMbus, this motherboard is jumper-less design.

2.2.1 Selecting the CPU Frequency

Celeron PPGA VID signal and SMbus clock generator provide CPU voltage auto-detection and allow user to set CPU frequency through CMOS setup, no jumper or switch is needed. The correct CPU information is saved into EEPROM, with these technologies, the disadvantages of Pentium base jumper-less design are eliminated. There will be no worry of wrong CPU voltage detection and no need to re-open the housing if CMOS battery loss.

The CPU frequency selection is set by going into:

BOIS Setup ✍ Frequency/Voltage Control ✍ CPU FSB
(The possible setting is 66.8, 72, 75, 83.3, 90, 95, 100.2, 105, 107, 110, 112, 114, 117, 119, 121, 124, 125, 127, 129, 130, 133.6, 136, 138, 140, 145, 150, and 155 MHz.)

BOIS Setup ✍ Frequency/Voltage Control ✍ CPU Ratio
(The possible setting is 3.0x, 3.5x, 4x, 4.5x, 5x, 5.5x, 6x, 6.5x, 7x, 7.5x, and 8x)

Core frequency = CPU Ratio * CPU FSB

INTEL Celeron PPGA	CPU Core Frequency	CPU Ratio	CPU FSB
Celeron PPGA 300A	300MHz=	4.5x	66MHz
Celeron PPGA 333	333MHz=	5x	66MHz
Celeron PPGA 350	350MHz=	3.5x	100MHz
Celeron PPGA 366	366MHz=	5.5x	66MHz
Celeron PPGA 400	400MHz=	6x	66MHz
Celeron PPGA 433	433MHz=	6.5x	66MHz
Celeron PPGA 466	466MHz=	7x	66MHz

Warning: *INTEL 810 chipset supports a maximum of 100MHz CPU FSB, the higher clock settings are for internal test only.* ***These settings exceed the specification of the chipset, which may cause serious system damage****.*

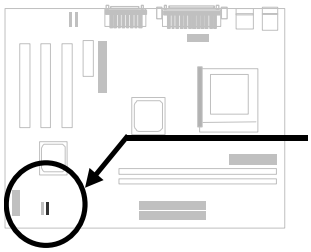
2.2.2 Setting the CPU Voltage

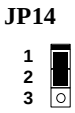
This motherboard supports Celeron PPGA VID function, the CPU core voltage is automatically detected, the range is from 1.3V to 2.05V.

2.2.3 Clearing the CMOS

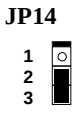
JP14	Clear CMOS
1-2	Normal operation (default)
2-3	Clear CMOS

You need to clear the CMOS if you forget your system password. To clear the CMOS, follow the procedures as below:





Normal Operation (default)



Clear CMOS

The procedure to clear CMOS:

1. Turn off the system and unplug the AC power.
2. Remove ATX power cable from connector PWR2.
3. Locate **JP14** and short pins 2-3 for a few seconds.
4. Return **JP14** to its normal setting by shorting pins 1-2.
5. Connect ATX power cable back to connector PWR2.
6. Turn on the system power.
7. Press [DEL] during bootup to enter the BIOS Setup Utility and specify a new password, if needed.

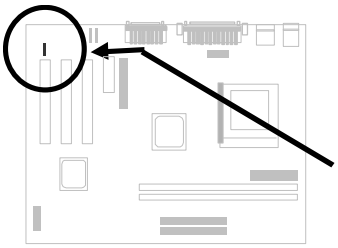
Tip: *If your system hangs or fails to boot because of over-clocking, please clear CMOS and the system will go back to the default setting (233MHz or 350MHz).*

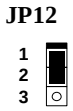
Tip: *If your system hangs or fails to boot because of over-clocking, simply use <Home> key to restore to the default setting. By this smart design, it would be more convenient to clear CPU frequency setting. For using this function, you just need to press <Home> key first and then press Power button at the same time. Note that do not release <Home> key until POST screen appearing.*

2.2.4 Sound

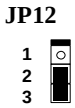
JP12	Sound
1-2	Enabled (default)
2-3	Disabled

If you want to install another sound card, you have to disable the onboard audio by setting this jumper to Disabled.





Enabled (default)



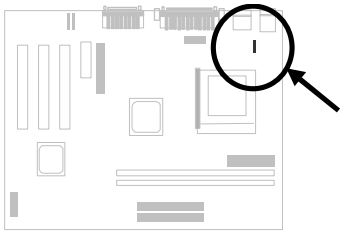
Disabled

2.2.5 KB/MS Wakeup

JP28	KB/MS Wakeup
1-2	Disabled
2-3	Enabled

This jumper is used to enable or disable Keyboard/Mouse Power ON function. If you select Enabled, you may decide the wakeup mode from BIOS Setup. To implement this function, the 5V Stand By current must be greater than 800mA.

Note that only PS/2 mouse supports Wake On Mouse function.



JP28

Disabled

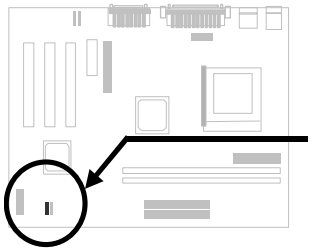
JP28

Enabled

2.2.6 SPK Out

JP27	SPK Out
1-2	Disabled
2-3	Enabled

This jumper is used to enable or disable speaker out.



JP27

Disabled

JP27

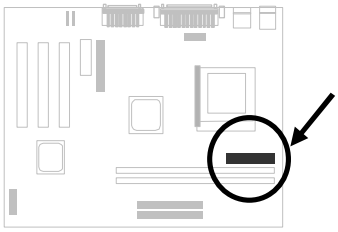
Enabled

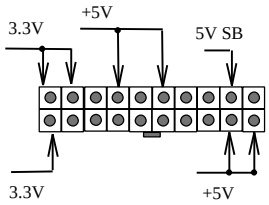
2.3 Connectors

2.3.1 Power Cable

The ATX power supply uses 20-pin connector shown below. Make sure you plug in the right direction.

Caution: *Make sure that the power supply is off before connecting or disconnecting the power cable.*

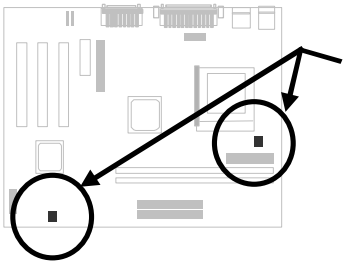


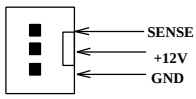


PWR2

2.3.2 Fan

Plug in the fan cable to the 3-pin fan connector onboard. The fan connector is marked **CPUFAN1** and **FAN1** on the system board.

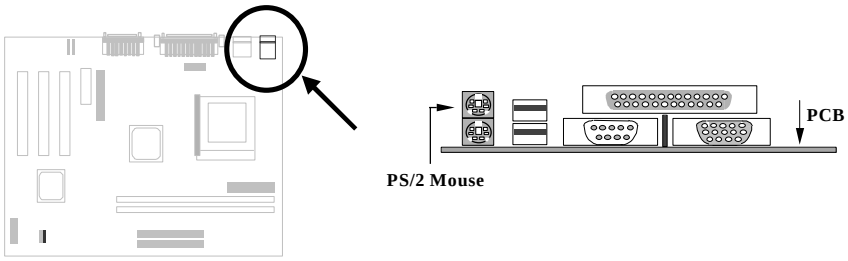




CPUFAN1
FAN1

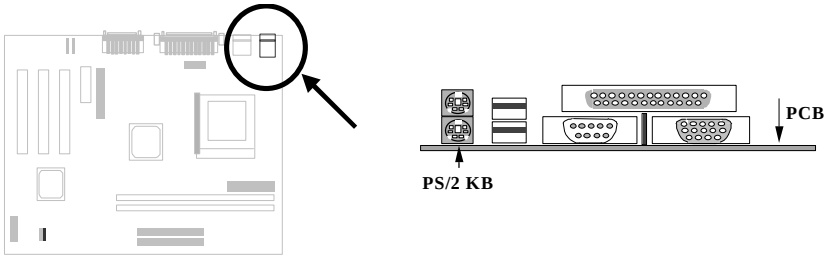
2.3.3 PS/2 Mouse

The onboard PS/2 mouse connector is a 6-pin Mini-Din connector marked **PS2**. The view angle of drawing shown here is from back panel of the housing.



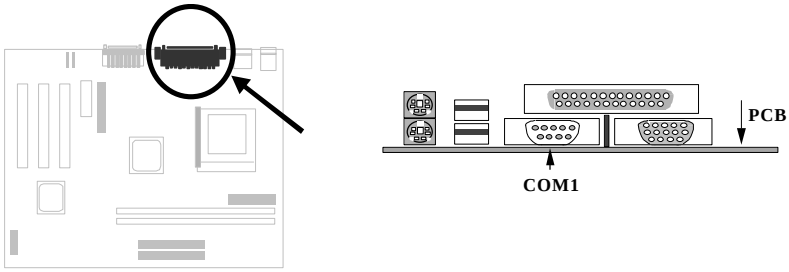
2.3.4 Keyboard

The onboard PS/2 keyboard connector is a 6-pin Mini-Din connector marked **KB2**. The view angle of drawing shown here is from back panel of the housing.



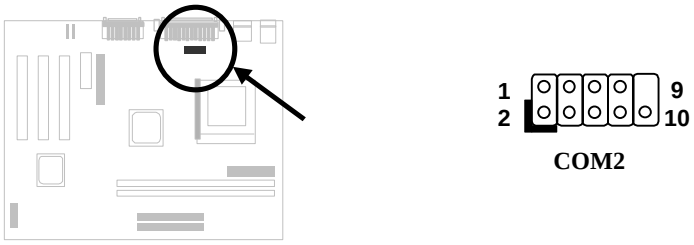
2.3.5 Serial Devices (COM1)

The onboard serial connectors **COM1** are 9-pin D-type connector on the back panel of mainboard.



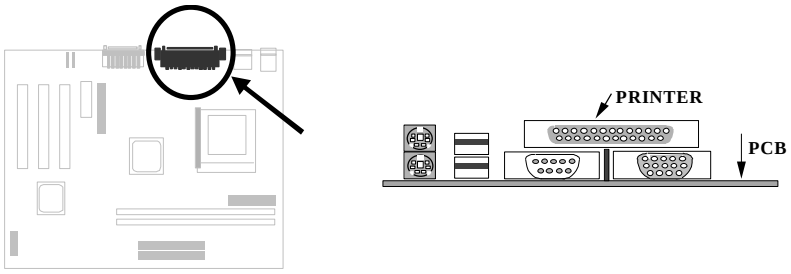
2.3.6 Serial Devices (COM2)

Plug in the IDE cable to the **COM2** connectors.



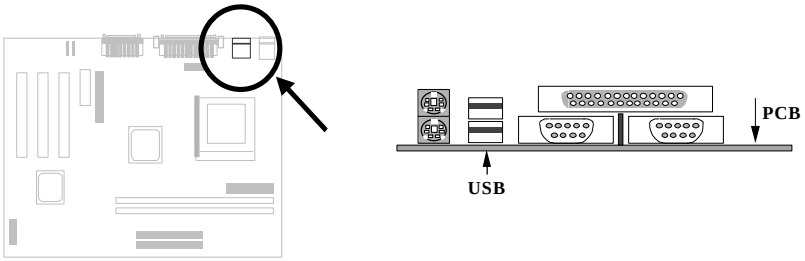
2.3.7 Printer

The onboard printer connector is a 25-pin D-type connector marked **PRINTER**. The view angle of drawing shown here is from back panel of the housing.



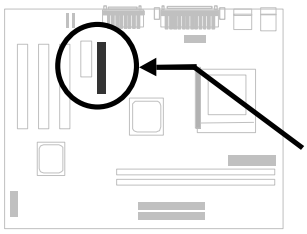
2.3.8 USB Device

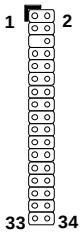
You can attach USB devices to the USB connector. The motherboard contains two USB connectors, which are marked as **USB.**



2.3.9 Floppy Drive

Connect the 34-pin floppy drive cable to the floppy drive connector marked as **FDC** on the system board.





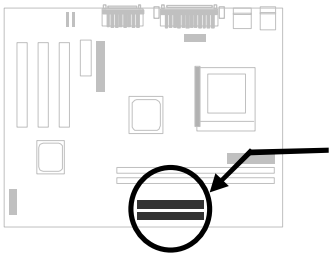
FDC

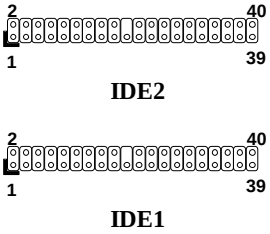
2.3.10 IDE Hard Disk and CD ROM

This mainboard supports two 40 pin IDE connectors marked as **IDE1** and **IDE2.** IDE1 is also known as primary channel and IDE2 as secondary channel, each channel supports two IDE devices that make total of four devices.

In order to work together, the two devices on each channel must be set differently to master and slave mode, either one can be hard disk or CDROM. The setting as master or slave mode depends on the jumper on your IDE device, please refer to your hard disk and CDROM manual accordingly.

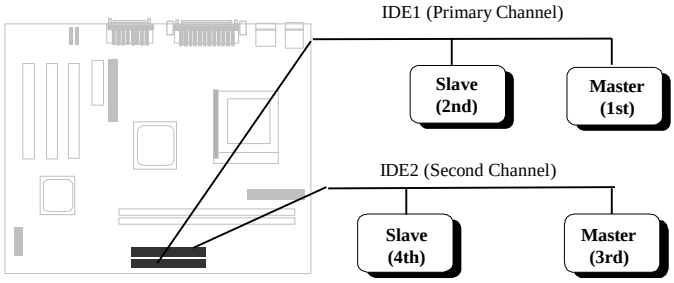
Connect your first IDE hard disk to master mode of the primary channel. If you have second IDE device to install in your system, connect it as slave mode on the same channel, and the third and fourth device can be connected on secondary channel as master and slave mode respectively.





***Caution**: The specification of IDE cable is maximum 46cm (18 inches), make sure your cable does not excess this length.*

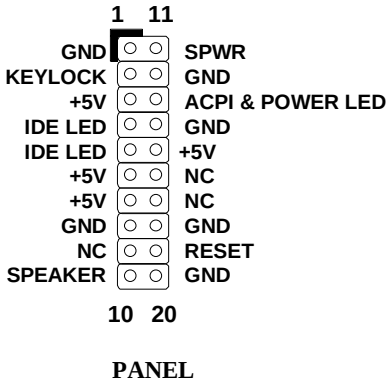
***Caution:** For better signal quality, it is recommended to set far end side device to master mode and follow the suggested sequence to install your new device. Please refer to the following figure.*

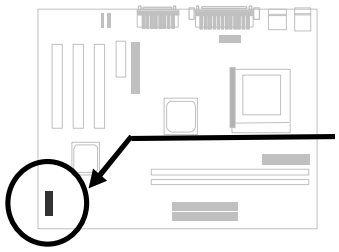


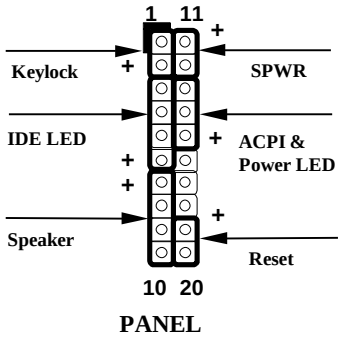
2.3.11 Panel Connector

The Panel (multifunction) connector is a 20-pin connector marked as **PANEL** on the board. Attach the power LED, keylock, speaker, SPWR, IDE LED and reset switch to the corresponding pins as shown in the figure.

If your ATX housing supports ACPI specification, the ACPI & Power the LED will keep flashing if you have enabled “suspend mode” item in the BIOS Setup.





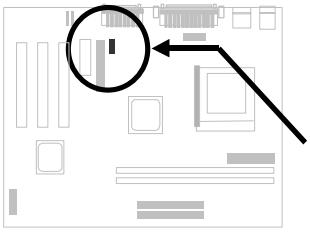


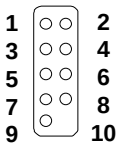
2.3.12 IrDA Connector

The IrDA connector can be configured to support wireless infrared module, with this module and application software such as Laplink or Win95 Direct Cable Connection, user can transfer files to or from laptops, notebooks, PDA and printers. This connector supports HPSIR (115.2Kbps, 2 meters), ASK-IR (56Kbps) and Fast IR (4Mbps, 2 meters).

Install infrared module onto **IrDA** connector and enable infrared function from BIOS setup, make sure to have correct orientation when you plug onto IrDA connector.

Pin	Description
1	+5V
3	FIRRX (FAST IR)
4	CIRRX (Consumer IR)
5	IRRX (STANDARD IR)
6	5VSB
7	GND
9	IRTX (STANDARD IR)



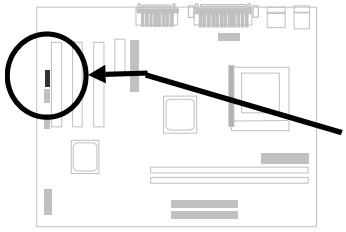


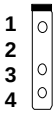
IrDA

2.3.13 Wake On Modem Connector

This motherboard implements special circuit to support Wake On Modem, both Internal Modem Card (AOpen MP56) and external box Modem are supported. Since Internal Modem card consumes no power when system power is off, it is recommended to use Internal Modem. To use AOpen MP56, connect 4-pin cable from **RING** connector of MP56 to **WOM** connector on the mainboard.

Pin	Description
1	+5V SB
2	NC
3	RING
4	GND



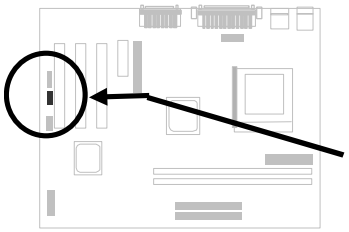


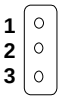
WOM

2.3.14 Wake On LAN Connector

This mainboard implements a **WOL** connector. To use Wake On LAN function, you need a network card that supports this feature. In addition, you also need to install a network management software, such as ADM.

Pin	Description
1	+5V SB
2	GND
3	LID



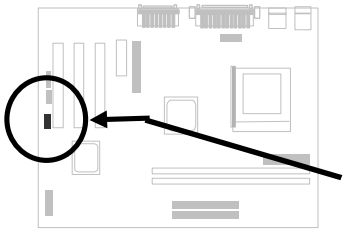


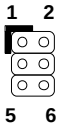
WOL

2.3.15 Sound Blaster LINK

SB-LINK is used to connect Creative PCI sound card. If you have a Creative PCI sound card installed, it is necessary to link the card to this connector for compatibility issue under DOS environment.

Pin	Description
1	GNT#
2	GND
3	NC
4	REQ#
5	GND
6	SIRQ#



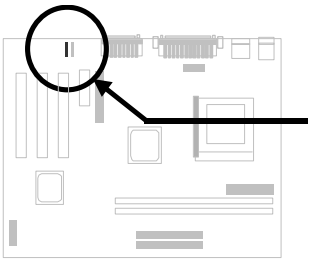


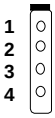
SB-LINK

2.3.16 CD Audio Connector

This connector is used to connect CD audio cable.

Pin	Description
1	L
2	GND
3	GND
4	R





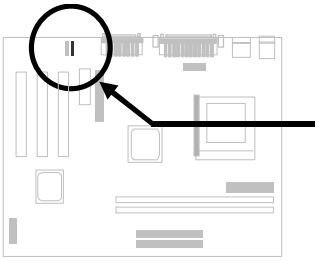
CD-IN

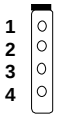
2.3.16 Mono In/Mic Out Connector

This connector is used to connect Mono In/Mic Out connector of an internal modem card. The pin 1-2 is **Mono In**, and the pin 3-4 is **Mic Out**. Please note that there is no standard for this kind of connector yet, only some internal modem cards implement this connector.

Please see the pin definitions to connect the cable.

Pin	Description
1	Mono In
2	GND
3	GND
4	Mic Out

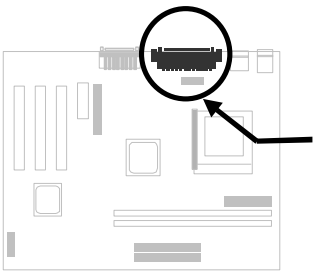


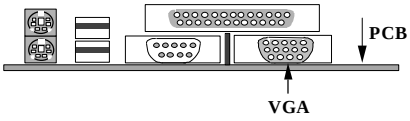


MODEM-CN

2.3.17 VGA Connector

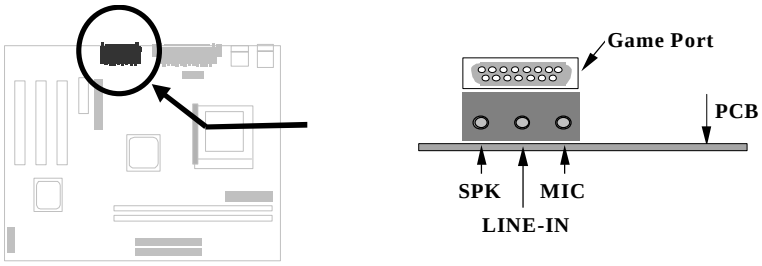
This motherboard comes with a high performance onchip graphics accelerator (I752) and onboard 4MB display cache.



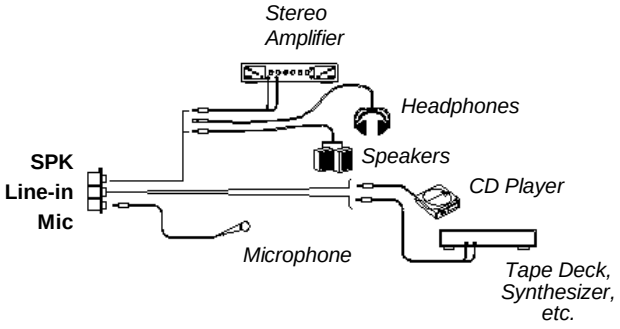


2.3.18 Audio Connector

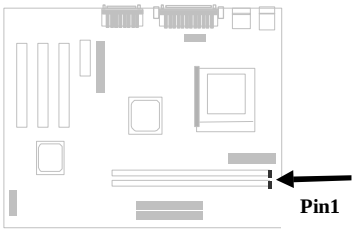
This motherboard comes with a 16-bit audio CODEC (AD1881) onboard.



To fully utilize the audio functions, you may connect various peripheral devices that the audio chip supports. The following figure shows the different devices that you can connect.



2.4 Configuring the System Memory

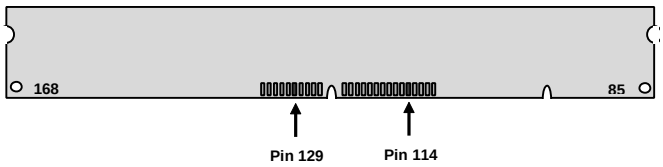


The DIMM type supported is PC100 SDRAM (Synchronous DRAM) only. This motherboard has two 168-pin DIMM (Dual-in-line Memory Module) sockets that allow you to install system memory up to **512MB**.

DIMM modules can be identified by the following factors:

I. Size: single side, 1Mx64 (8MB), 2Mx64 (16MB), 4Mx64 (32MB), 8Mx64 (64MB), 16Mx64 (128MB), and double side, 1Mx64x2 (16MB), 2Mx64x2 (32MB), 4Mx64x2 (64MB), 8Mx64x2 (128MB).

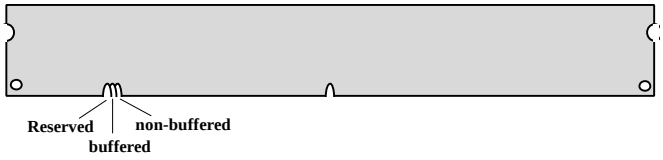
Tip: *Here is a trick to check if your DIMM is single-side or double-side -- if there are traces connected to golden finger pin 114 and pin 129 of the DIMM, the DIMM is probably double-side; otherwise, it is single-side. The following figure is for your reference.*



II. Speed:

normally marked as -12, which means the clock cycle time is 12ns and maximum clock of this SDRAM is 83MHz. Sometimes you can also find the SDRAM marked as -67, which means maximum clock is 67MHz.

III. **Buffered and non-buffered:** This motherboard supports non-buffered DIMMs. You can identify non-buffered DIMMs and buffered DIMMs according to the position of the notch, following figure is for your reference:



Because the positions are different, only non-buffered DIMMs can be inserted into the DIMM sockets on this motherboard. Although most of DIMMs on current market are non-buffered, we still suggest you to ask your dealer for the correct type.

IV. **2-clock and 4-clock signals:** Although both of 2-clock and 4-clock signals are supported by this motherboard, we strongly recommend choosing 4-clock SDRAM in consideration of reliability.

Tip: *To identify 2-clock and 4-clock SDRAM, you may check if there are traces connected to golden finger pin 79 and pin 163 of the SDRAM. If there are traces, the SDRAM is probably 4-clock; Otherwise, it is 2-clock.*

There is no jumper setting required for the memory size or type. It is automatically detected by the system BIOS, and the total memory size is to add them together. **The maximum is 512MB**.

Total Memory Size = Size of DIMM1 + Size of DIMM2

The following table lists the recommended DRAM combinations of DIMM:

DIMM Data chip	Bit size per side	Single/ Double side	Chip count	DIMM size	Recommended
1M by 16	1Mx64	x1	4	8MB	Yes
1M by 16	1Mx64	x2	8	16MB	Yes
2M by 8	2Mx64	x1	8	16MB	Yes
2M by 8	2Mx64	x2	16	32MB	Yes
4M by 16	4Mx64	x1	4	32MB	Yes
4M by 16	4Mx64	x2	8	64MB	Yes
4M by 32	4Mx64	x1	2	32MB	Yes
4M by 32	4Mx64	x2	4	64MB	Yes
8M by 8	8Mx64	x1	8	64MB	Yes
8M by 8	8Mx64	x2	16	128MB	Yes
8M by 16	8Mx64	x1	4	64MB	Yes
8M by 16	8Mx64	x2	8	128MB	Yes
8M by 32	8Mx64	x1	2	64MB	Yes
8M by 32	8Mx64	x2	4	128MB	Yes
16M by 8	16Mx64	x1	8	128MB	Yes
16M by 8	16Mx64	x2	16	256MB	Yes

The following table lists the possible DRAM combinations that is **NOT** recommended:

DIMM Data chip	Bit size per side	Single/ Double side	Chip count	DIMM size	Recommended
4M by 4	4Mx64	x2	32	64MB	No
16M by 4	16Mx64	x1	16	128MB	No
16M by 4	16Mx64	x2	32	256MB	No

Tip: *The parity mode uses 1 parity bit for each byte, normally it is even parity mode, that is, each time the memory data is updated, parity bit will be adjusted to have even count "1" for each byte. When next time, if memory is read with odd number of "1", the parity error is occurred and this is called single bit error detection.*

Chapter 3

Award BIOS

This chapter tells how to configure the system parameters. You may update your BIOS via AWARD Flash Utility.

Important: *Because the BIOS code is the most often changed part of the mainboard design, the BIOS information contained in this chapter (especially the Chipset Setup parameters) may be a little different compared to the actual BIOS that came with your mainboard.*

3.1 Entering the Award BIOS Setup Menu

The BIOS setup utility is a segment of codes/routines residing in the BIOS Flash ROM. This routine allows you to configure the system parameters and save the configuration into the 128 byte CMOS area, (normally in the RTC chip or directly in the main chipset). To enter the BIOS Setup, press DEL during POST (Power-On Self Test).

***Tip**: Choose "Load Setup Defaults" for recommended optimal performance. Choose "Load Turbo Defaults" for best performance with light system loading. Refer to section 3.7.*

The section at the bottom of the screen tells how to control the screen. Use the arrow keys to move between items, F9 to change language, ESC to exit, and F10 to save the changes before exit. Another section at the bottom of the screen displays a brief description of the highlighted item.

After selecting an item, press Enter to select or enter a submenu.

3.2 Standard CMOS Setup

The "Standard CMOS Setup" sets the basic system parameters such as the date, time, and the hard disk type. Use the arrow keys to highlight an item and PGUP or PGDN to select the value for each item.

Standard CMOS ✍ Date

To set the date, highlight the Date parameter. Press PGUP or PGDN to set the current date. The date format is month, date, and year.

Standard CMOS ✍ Time

To set the time, highlight the Time parameter. Press PGUP or PGDN to set the current time in hour, minute, and second format. The time is based on the 24 hour military clock.

Standard CMOS ✍ IDE Primary Master ✍ Type
Standard CMOS ✍ IDE Primary Slave ✍ Type
Standard CMOS ✍ IDE Secondary Master ✍ Type
Standard CMOS ✍ IDE Secondary Slave ✍ Type

IDE Primary Master
Auto
Manual
None

This item lets you select the IDE hard disk parameters that your system supports. These parameters are Size, Number of Cylinder, Number of Head, Start Cylinder for Pre-compensation, Cylinder number of Head Landing Zone and Number of Sector per Track. The default setting is Auto, which enables BIOS to automatically detect the parameters of installed HDD at POST (Power-On Self Test). If you prefer to enter HDD parameters manually, select Manual. Select None if no HDD is connected to the system.

The IDE CDROM is always automatically detected.

Tip: *For an IDE hard disk, we recommend that you use the "IDE HDD Auto Detection" to enter the drive specifications automatically. See the section "IDE HDD Auto Detection".*

Standard CMOS ✍ Drive A
Standard CMOS ✍ Drive B

Drive A
None
360KB 5.25"
1.2MB 5.25"
720KB 3.5"
1.44MB 3.5"
2.88MB 3.5"

These items select floppy drive type. The available settings and types supported by the mainboard are listed on the left.

Standard CMOS ✍ Video

Video
EGA/VGA
CGA40
CGA80
Mono

This item specifies the type of video card in use. The default setting is VGA/EGA. Since current PCs use VGA only, this function is almost useless and may be disregarded in the future.

Standard CMOS ✍ Halt On

Halt On
No Errors
All Errors
All, But Keyboard
All, But Diskette
All, But Disk/Key

This parameter enables you to control the system stops in case of Power-On Self Test (POST) error.

3.3 Advanced BIOS Features

This screen appears when you select the option "BIOS Features Setup" from the main menu.

Advanced BIOS Features ✍ Virus Warning

Virus Warning
Enabled
Disabled

Set this parameter to Enabled to activate the warning message. This feature protects the boot sector and partition table of your hard disk from virus intrusion. Any attempt during boot up to write to the boot sector of the hard disk drive stops the system and the following warning message appears on the screen. Run an anti-virus program to locate the problem.

```
! WARNING !
Disk Boot Sector is to be modified
Type "Y" to accept write, or "N" to abort write
Award Software, Inc.
```

Advanced BIOS Features ✍ CPU Internal Cache

CPU Internal Cache
Enabled
Disabled

Enabling this parameter activates the CPU internal cache. Disabling the parameter slows down the system. Therefore, we recommend that you leave it enabled unless you are troubleshooting a problem.

Advanced BIOS Features ✍ External Cache

External Cache
Enabled
Disabled

Enabling this parameter activates the secondary cache (currently, PBSRAM cache). Disabling the parameter slows down the system. Therefore, we recommend that you leave it enabled unless you are troubleshooting a problem.

Advanced BIOS Features ✍ CPU L2 Cache ECC

CPU L2 Cache ECC
Enabled
Disabled

This item lets you enable or disable L2 Cache ECC checking.

Advanced BIOS Features ✍ Quick Power On Self Test

Quick Power on Self test
Enable
Disabled

This parameter speeds up POST by skipping some items that are normally checked.

Advanced BIOS Features ✍ First Boot Device

First Boot Device
A:
LS/ZIP
C:
SCSI
CDROM
D:
E:
F:
LAN
Disabled

This parameter allows you to specify the system boot up search sequence. The hard disk ID are listed below:

C: Primary master

D: Primary slave

E: Secondary master

F: Secondary slave

LS: LS120

Zip: IOMEGA ZIP Drive

Advanced BIOS Features ✍ Second Boot Device

Second Boot Device
A:
LS/ZIP
C:
SCSI
CDROM
D:
E:
F:
LAN
Disabled

This parameter allows you to specify the system boot up search sequence. The hard disk ID are listed below:

C: Primary master

D: Primary slave

E: Secondary master

F: Secondary slave

LS: LS120

Zip: IOMEGA ZIP Drive

Advanced BIOS Features ✍ Third Boot Device

Third Boot Device
A:
LS/ZIP
C:
SCSI
CDROM
D:
E:
F:
LAN
Disabled

This parameter allows you to specify the system boot up search sequence. The hard disk ID are listed below:

C: Primary master

D: Primary slave

E: Secondary master

F: Secondary slave

LS: LS120

Zip: IOMEGA ZIP Drive

Advanced BIOS Features ✍ Boot Other Device

Boot Other Device
Enabled
Disabled

This parameter allows you to specify the system boot up search sequence. The hard disk ID are listed below:

Advanced BIOS Features ✍ Swap Floppy Drive

Swap Floppy Drive
Enabled
Disabled

This item allows you to swap floppy drives. For example, if you have two floppy drives (A and B), you can assign the first drive as drive B and the second drive as drive A or vice-versa.

Advanced BIOS Features ✍ Boot Up NumLock Status

Boot Up NumLock Status
On
Off

Setting this parameter to On enables the numeric function of the numeric keypad. Set this parameter to Off to disregard the function. Disabling the numeric function allows you to use the numeric keypad for cursor control.

Advanced BIOS Features ✍ Typematic Rate Setting

Typematic Rate Setting
Enabled
Disabled

Set this parameter to Enable/Disable the keyboard repeat function. When enabled, continually holding down a key on the keyboard will generate repeatedly keystrokes.

Advanced BIOS Features ✍ Typematic Rate (Chars/Sec)

Typematic Rate
6
8
10
12
15
20
24
30

This item allows you to control the speed of repeated keystrokes. The default is 30 characters/sec.

Advanced BIOS Features ✍ Typematic Delay (Msec)

Typematic Delay
250
500
750
1000

This parameter allows you to control the delay time between the first and the second keystroke (where the repeated keystrokes begin). The typematic delay settings are 250, 500, 750, and 1000 msec.

Advanced BIOS Features ✍ Security Option

Security Option
Setup
System

The **System** option limits access to both the System boot and BIOS setup. A prompt asking you to enter your password appears on the screen every time you boot the system.

The **Setup** option limits access only to BIOS setup.

To disable the security option, select Password Setting from the main menu, don't type anything and just press <Enter>.

Advanced BIOS Features ✍ OS Select for DRAM > 64MB

OS Select for DRAM > 64MB
OS/2
Non-OS/2

Set to OS/2 if your system is utilizing an OS/2 operating system and has a memory size of more than 64 MB.

3.4 Advanced Chipset Features

The "Chipset Features Setup" includes settings for the chipset dependent features. These features are related to system performance.

Caution: *Make sure you fully understand the items contained in this menu before you try to change anything. You may change the parameter settings to improve system performance. However, it may cause system unstable if the setting is not correct for your system configuration.*

Advanced Chipset Features ✍ SDRAM CAS Latency Time

SDRAM CAS Latency Time
2
3

These are timing of SDRAM CAS Latency and RAS to CAS Delay, calculated by clocks. They are important parameters affects SDRAM performance, default is 2 clocks. If your SDRAM has unstable problem, change 2/2 to 3/3.

Advanced Chipset Features ✍ SDRAM Cycle Time

SDRAM Cycle Time
5/7
6/8

This item will affect SDRAM performance. If the system fails to bootup, please set this item to 6/8.

Advanced Chipset Features ✍ SDRAM RAS-to-CAS Delay

SDRAM RAS-to-CAS Delay
3
2

SDRAM RAS-to-CAS Delay is an important parameter that affects SDRAM performance. If the system fails to bootup, please set this item to 3.

Advanced Chipset Features ✍ SDRAM RAS Precharge Time

SDRAM RAS Precharge Time
3
2

The RAS Precharge means the timing to inactive RAS and the timing for DRAM to do precharge before next RAS can be issued. RAS is the address latch control signal of DRAM row address. The default setting is **3 clocks**.

Advanced Chipset Features ✍ Video BIOS Cacheable

Video BIOS Cacheable
Enabled
Disabled

Allows the video BIOS to be cached to allow faster video performance.

Advanced Chipset Features ✍ Video RAM Cacheable

Video RAM Cacheable
Enabled
Disabled

This item lets you cache Video RAM A000 and B000.

Advanced Chipset Features ✍ Memory Hole At 15M-16M

Memory Hole At 15M-16M
Enabled
Disabled

This option lets you reserve system memory area for special ISA cards. The chipset accesses code/data of these areas from the ISA bus directly. Normally, these areas are reserved for memory mapped I/O card.

Advanced Chipset Features ✍ Delayed Transaction

Delayed Transaction
Enabled
Disabled

This item lets you control the Delayed Transaction function of the PIIX4 chipset (Intel PCI to ISA bridge). This function is used to meet latency of PCI cycles to or from ISA bus. Try to enable or disable it, if you have ISA card compatibility problem.

Advanced Chipset Features ✍ On-Chip Video

On-Chip Video
Enabled
Disabled

This item is used to enable or disable the onchip AGP.

Advanced Chipset Features ✍ On-Chip Video Window Size

On-Chip Video Window Size
64MB
32MB

This item is used to select graphic display cache window size.

Advanced Chipset Features ✍ Cas# Latency

Cas# Latency
2
3

Cas# Latency is an important parameter that affects SDRAM performance. If the system fails to bootup, please set this item to 3.

Advanced Chipset Features ✍ Paging Mode Control

Paging Mode Control
Slow
Fast

This item will affect SDRAM performance. If the system fails to bootup, please set this item to Slow.

Advanced Chipset Features ✍ RAS-to-CAS Override

RAS-to-CAS Override
Slow
Fast

This item will affect SDRAM performance. If the system fails to bootup, please set this item to Slow.

Advanced Chipset Features ✍ RAS# Timing

RAS# Timing
Slow
Fast

This item will affect SDRAM performance. If the system fails to bootup, please set this item to Slow.

Advanced Chipset Features ✍ RAS# Precharge

RAS# Precharge
Slow
Fast

This item will affect SDRAM performance. If the system fails to bootup, please set this item to Slow.

3.5 Integrated Peripherals

This submenu appears if you select the option "Integrated Peripherals" from the main menu. This option allows you to configure the I/O features.

Integrated Peripherals ✍ On-Chip Primary PCI IDE
Integrated Peripherals ✍ On-Chip Secondary PCI IDE

On-Chip Primary PCI IDE
Enabled
Disabled

This parameter lets you enable or disable the IDE device connected to the primary IDE connector.

Integrated Peripherals ✍ IDE Primary Master PIO
Integrated Peripherals ✍ IDE Primary Slave PIO
Integrated Peripherals ✍ IDE Secondary Master PIO
Integrated Peripherals ✍ IDE Secondary Slave PIO

IDE Primary Master PIO
Auto
Mode 1
Mode 2
Mode 3
Mode 4

Setting this item to **Auto** activates the HDD speed auto-detect function. The PIO mode specifies the data transfer rate of HDD. For example: mode 0 data transfer rate is 3.3MB/s, mode 1 is 5.2MB/s, mode 2 is 8.3MB/s, mode 3 is 11.1MB/s and mode 4 is 16.6MB/s. If your hard disk performance becomes unstable, you may manually try the slower mode.

Caution: *It is recommended that you connect the first IDE device of each channel to the endmost connector of the IDE cable. Refer to section "Connectors" for details on how to connect IDE device(s).*

Integrated Peripherals ✍ IDE Primary Master UDMA
Integrated Peripherals ✍ IDE Primary Slave UDMA
Integrated Peripherals ✍ IDE Secondary Master UDMA
Integrated Peripherals ✍ IDE Secondary Slave UDMA

IDE Primary Master UDMA
Auto
Disabled

This item allows you to set the Ultra DMA/33 mode supported by the hard disk drive connected to your primary IDE connector.

Integrated Peripherals ✍ ATA66/33 Cable Detection

ATA66/33 Cable Detection
Enabled
Disabled

This item allows you enable or disable the auto function of ATA Cable detection. Choose disable mode if you do not want to receive the warning message when ATA66 HDD connects to a 40 pin cable.

Integrated Peripherals ✍ NCR SCSI ROM Scan

NCR SCSI ROM Scan
Enabled
Disabled

This item lets you disable the NCR SCSI ROM Scan if you have “no ROM” NCR SCSI and you do not want to boot your system from SCSI.

Integrated Peripherals ✍ USB Controller

USB Controller
Enabled
Disabled

This item lets you enable or disable the USB controller.

Integrated Peripherals ✍ USB Keyboard Support

USB Keyboard Support
Enabled
Disabled

This item lets you enable or disable the USB keyboard driver within the onboard BIOS. The keyboard driver simulates legacy keyboard command and let you use USB keyboard during POST or after boot if you don't have USB driver in the operating system.

***Caution**: You can not use both USB driver and USB legacy keyboard at the same time. Disable "USB Legacy Support" if you have USB driver in the operating system.*

Integrated Peripherals ✍ Init Display First

Init Display First
PCI Slot
Onboard

If you installed a PCI VGA card, this item lets you decide which one is the initial display card.

Integrated Peripherals ✍ AC97 Audio

AC97 Audio
Enabled
Disabled

This item is used to enable or disable the onboard audio.

Integrated Peripherals ✍ AC97 Modem

AC97 Modem
Enabled
Disabled

The item is used to enable or disable the AC97 modem. If disabled, an AMR modem card can't work properly.

Integrated Peripherals ✍ IDE HDD Block Mode

IDE HDD Block Mode
Enabled
Disabled

This feature enhances disk performance by allowing multisector data transfers and eliminates the interrupt handling time for each sector. Most IDE drives, except with old designs, can support this feature.

Integrated Peripherals ✍ Power On Function

Power On Function
Any Key
Button Only
Keyboard 98
Password
Hot Key
Mouse Left
Mouse Right

This item is used to select Wake on Keyboard/Mouse mode.

Any Key: This function allows you wake up the system by clicking any key.

Button Only: Disable Wake on KB/MS function. You can boot up your system by power button only.

Keyboard 98: If selecting this option, you can boot up the system by power button and the "Wake" key on Keyboard 98.

Password: Disable the function of power button and let the system can only be powered on through the preset keys (like a password).

Hot Key: If selecting this option, you also need to specify the hot key from "Hot Key Power On" item.

Mouse Left: This function allows you wake up the system by clicking left mouse button twice successively.

Mouse Right: This function allows you wake up the system by clicking right mouse button twice successively.

***Caution**: To implement Wake On Keyboard/Mouse function, you must set JP28 to Enabled.*

***Caution**: Wake On Mouse function applies to PS/2 mouse only.*

***Caution**: If you set a Password but forget it, please clear CMOS.*

Integrated Peripherals ✍ KB Power On Password

KB Power On Password

You can specify 1-5 keys as a password.

Integrated Peripherals ✍ Hot Key Power On

Hot Key Power On
Ctrl-F1
Ctrl-F2
Ctrl-F3
Ctrl-F4
Ctrl-F5
Ctrl-F6
Ctrl-F7
Ctrl-F8
Ctrl-F9
Ctrl-F10
Ctrl-F11
Ctrl-F12

If you select "Hot Key" option in "Power On Function" Item, you need to specify a hot key here.

Integrated Peripherals ✍ Onboard FDC Controller

Onboard FDC Controller
Enabled
Disabled

Setting this parameter to **Enabled** allows you to connect your floppy disk drives to the onboard floppy disk connector instead of a separate controller card. Change the setting to Disabled if you want to use a separate controller card.

Integrated Peripherals ✍ Onboard Serial Port 1
Integrated Peripherals ✍ Onboard Serial Port 2

Onboard Serial Port 1
Auto
3F8/IRQ4
2F8/IRQ3
3E8/IRQ4
2E8/IRQ3
Disabled

This item allow you to assign address and interrupt for the board serial port. Default is **Auto**.

Note: *If you are using a network card, make sure that the interrupt does not conflict.*

Integrated Peripherals ✍ UART Mode Select

UART Mode Select
IrDA
ASKIR
Normal

This item is configurable only if the "Onboard UART 2" is enabled. This allows you to specify the mode of serial port2. The available mode selections are:

?? **ASKIR -** Select this setting if you installed an Infrared module via IrDA connector (refer to section 2.3 "Connectors"). This ASKIR setting allows infrared serial communication at a maximum baud rate of 56K baud.

?? **HPSIR -** Select this setting if you installed an Infrared module in your system via IrDA connector (refer to section 2.3 "Connectors"). The HPSIR setting allows infrared serial communication at a maximum baud rate of 115K baud.

?? **FIR -** Select this setting if you installed an Infrared module via IrDA connector (refer to section 2.3 "Connectors"). This FIR (Fast IR) setting allows infrared serial communication at a maximum baud rate of 4M baud.

?? **Normal -** Sets serial port 2 to operate in normal mode. This is the default setting.

Integrated Peripherals ✍ RxD, TxD Active

RxD, TxD Active
Hi, Hi
Hi, Lo,
Lo, Hi
Lo, Lo

This item is used to select RxD (Receive Data) and TxD (Transmit Data) mode for UART, for instance, IR device, modem, etc. Normally, we suggest you keep the default setting. Please see the documentation that comes with your device.

Integrated Peripherals ✍ IR Transmission Delay

IR Transmission Delay
Enabled
Disabled

If Enabled is selected, there will be a 4 character delay when SIR is changed from TX mode to RX mode.

Integrated Peripherals ✍ Onboard Parallel Port

Onboard Parallel Port
3BC/IRQ7
378/IRQ7
278/IRQ5
Disabled

This item controls the onboard parallel port address and interrupt.

Note: *If you are using an I/O card with a parallel port, make sure that the addresses and IRQ do not conflict.*

Integrated Peripherals ✍ Parallel Port Mode

Parallel Port Mode
SPP
EPP
ECP
ECP + EPP

This item lets you set the parallel port mode. The mode options are SPP (Standard and Bidirection Parallel Port), EPP (Enhanced Parallel Port) and ECP (Extended Parallel Port). SPP is the IBM AT and PS/2 compatible mode. EPP enhances the parallel port throughput by directly writing/reading data to/from parallel port without latch. ECP supports DMA and RLE (Run Length Encoded) compression and decompression.

Integrated Peripherals ✍ EPP Mode Select

EPP Mode Select
EPP1.7
EPP1.9

This item lets you select EPP mode.

Integrated Peripherals ✍ ECP Mode Use DMA

ECP Mode Use DMA
3
1

This item lets you set the DMA channel of ECP mode.

Power Management ✍ PWRON After PWR-Fail

PWRON After PWR-Fail
Former-Sts
On
Off

A traditional ATX system should remain at power off stage when AC power resumes from power failure. This design is inconvenient for a network server or workstation, without an UPS, that needs to keep power-on. This item is used to solve this problem. Selecting On lets the system can automatically power-on after AC power resumes; in the other hand, the system will power-off if you select Off. If Former-Sts option is selected, the system will power-on or power-off based on the original state.

Integrated Peripherals ✍ Game Port Address

Game Port Address
Disabled
201
209

This item is used to assign an address for the Game port.

Integrated Peripherals ✍ MIDI Port Address

MIDI Port Address
Disabled
330
300

This item is used to assign an address for the MIDI port.

Integrated Peripherals ✍ MIDI Port IRQ

MIDI Port IRQ
5
7

This item is used to assign an IRQ for the MIDI port.

3.6 Power Management Setup

The Power Management Setup screen enables you to control the mainboard green features.

Power Management ✍ ACPI Function

ACPI Function
Enabled
Disabled

If your OS is ACPI enabled you have to set this item to Enabled, or there may be unexpected errors. If your OS is APM mode, you can remain the Disabled setting.

Power Management ✍ Power Management

Power Management
Max Saving
Mix Saving
User Define
Disabled

This function allows you to set the default parameters of power-saving modes. Set to **Disable** to turn off power management function. Set to User Define to choose your own parameters.

Mode	Doze	Standby	Suspend	HDD Power Down
Min Saving	1 hour	1 hour	1 hour	15 min
Max Saving	1 min	1 min	1 min	1 min

Power Management ✍ Video Off Method

Video Off Method
V/H SYNC + Blank
DPMS
Blank Screen

This determines the way that the monitor is off. Blank Screen writes blanks to video buffer. V/H SYNC+Blank allows BIOS to control VSYNC and HSYNC signals. This function applies only for DPMS (Display Power Management Standard) monitor. The DPMS mode uses DPMS function provided by VGA card.

Power Management ✍ Video Off In Suspend

Video Off In Suspend
No
Yes

The item is used to decide whether the video is off in the suspend mode.

Power Management ✍ Suspend Type

Suspend Type
PWRON Suspend
Stop Grant

You can select suspend mode by this item. If **PWRON Suspend** is selected, the CPU will enter into Doze mode. If **Stop Grant** is selected, the CPU clock will enter into Sleep mode. In both of these modes, the system activities are detected by monitoring the IRQ signals or I/O.

Power Management ✍ Modem Use IRQ

Modem Use IRQ
3
4
5
7
9
10
11
N/A

This item lets you set an IRQ for the modem.

Power Management ✍ Suspend Mode

Suspend Mode
Disabled
1 Min
2 Min
4 Min
8 Min
12 Min
20 Min
30 Min
40 Min
1 Hour

This item lets you set the period of time after which the system enters into Suspend mode. The Suspend mode can be Power On Suspend or Suspend to Hard Drive, selected by "Suspend Mode Option".

Power Management ✍ HDD Power Down

HDD Power Down
Disabled
1 Min
.....
15 Min

This option lets you specify the IDE HDD idle time before the device enters the power down state. This item is independent from the power states previously described in this section (Standby and Suspend).

Power Management ✍ Soft-Off by PWR-BTTN

Soft-Off by PWR-BTTN
Delay 4 sec.
Instant-Off

This is a specification of ACPI and supported by hardware. When **Delay 4 sec.** is selected, the soft power switch on the front panel can be used to control power On, Suspend and Off. If the switch is pressed less than 4 sec during power On, the system will go into Suspend mode. If the switch is pressed longer than 4 sec, the system will be turned Off. The default setting is **Instant-Off**, soft power switch is only used to control On and Off, there is no need to press 4 sec, and there is no Suspend.

Power Management ✍ Wake On LAN

Wake On LAN
Enabled
Disabled

This option lets you specify enable or disable LAN Wake Up function.

Power Management ✍ CPU THRM-Throttling

CPU THRM-Throttling
87.5%
75.0%
62.5%
50.0%
37.5%
25.0%

Clock Throttling means at the Doze/Standby state, the CPU clock count in a given time (not the frequency) is reduced to the ratio specified in this parameter. Actually, the period per CPU clock is not changed. For example, a 66MHz CPU clock remains the same 30ns clock period when system goes into Doze/Suspend. The chipset generates the STPCLK (stop clock) signal periodically to prevent CPU for accepting clock from clock generator. For full power on, the CPU can receive 66M count in one second. If the Slow Clock Ratio is set to 50%, the CPU will only receive 33M clock count in one second. This will effectively reduce CPU speed as well as CPU power.

Power Management ✍ Resume By Alarm

Resume By Alarm
Enabled
Disabled

This option lets you enable or disable the RTC Wake Up function.

Power Management ✍ Date (of Month)

Date (of Month)
0
1
.....
31

This item is displayed when you enable the Wake On RTC Timer option. Here you can specify what date you want to wake up the system. For Example, setting to 15 will wake up the system on the 15th day of every month.

Note: *Setting this item to 0 will wake up the system on the specified time (which can be set in the Wake On RTC Timer item) every day.*

Power Management ✍ Time (hh:mm:ss)

Time (hh:mm:ss)
hh:mm:ss

This item is displayed when you enable the Wake ON RTC Timer option. Here you can specify what time you want to wake up the system.

Power Management ✍ Primary IDE 0
Power Management ✍ Primary IDE 1
Power Management ✍ Secondary IDE 0
Power Management ✍ Secondary IDE 1
Power Management ✍ FDD, COM, LPT Port
Power Management ✍ PCI PIRQ [A-D] #

Primary IDE 0
Enabled
Disabled

These items enable or disable the detection of IDE, floppy, serial and parallel port activities for power down state transition. Actually it detects the read/write to/from I/O port.

3.7 PNP/PCI Configurations

The PNP/PCI Configuration Setup allows you to configure the ISA and PCI devices installed in your system. This submenu appears if you select the option "PNP/PCI Configurations" from the main menu.

PNP/PCI Configuration ✍ Reset Configuration Data

Reset Configuration Data
Enabled
Disabled

In case conflict occurs after you assign the IRQs or after you configure your system, you can enable this function, allow your system to automatically reset your configuration and reassign the IRQs, DMAs, and I/O address.

PNP/PCI Configuration ✍ Resources Controlled By

Resources Controlled by
Auto
Manual

Setting this option to Manual allows you to individually assign the IRQs and DMAs to the ISA and PCI devices. Set this to **Auto** to enable the auto-configuration function.

PNP/PCI Configuration ✍ IRQ3 (COM2)
PNP/PCI Configuration ✍ IRQ4 (COM1)
PNP/PCI Configuration ✍ IRQ5 (Network/Sound or Others)
PNP/PCI Configuration ✍ IRQ7 (Printer or Others)
PNP/PCI Configuration ✍ IRQ9 (Video or Others)
PNP/PCI Configuration ✍ IRQ10 (SCSI or Others)
PNP/PCI Configuration ✍ IRQ11 (SCSI or Others)
PNP/PCI Configuration ✍ IRQ12 (PS/2 Mouse)
PNP/PCI Configuration ✍ IRQ14 (IDE1)
PNP/PCI Configuration ✍ IRQ15 (IDE2)

IRQ 3
Legacy ISA
PCI/ISA PnP

If your ISA card is not PnP compatible and requires a special IRQ to support its function, set the selected IRQ to **Legacy ISA**. This setting informs the PnP BIOS to reserve the selected IRQ for the installed legacy ISA card. The default is **PCI/ISA PnP**. Take note that PCI cards are always PnP compatible (except old PCI IDE card).

PNP/PCI Configuration ✍ PCI/VGA Palette Snoop

PCI/VGA Palette Snoop
Enabled
Disabled

Enabling this item informs the PCI VGA card to keep silent (and to prevent conflict) when palette register is updated (i.e., accepts data without responding any communication signals). This is useful only when two display cards use the same palette address and plugged in the PCI bus at the same time (such as MPEQ or Video capture). In such case, PCI VGA is silent while MPEQ/Video capture is set to function normally.

3.8 PC Health Status

The PNP/PCI Configuration Setup allows you to configure the ISA and PCI devices installed in your system. This submenu appears if you select the option "PNP/PCI Configurations" from the main menu.

PC Health Status ✍ CPU Warning Temperature

CPU Warning Temperature
Disabled
50
53
56

This item is used to specify a CPU warning temperature. When the CPU's temperature is higher than this predefined value, the CPU's speed will automatically slow down and there will be a warning from BIOS.

3.9 Frequency/Voltage Control

The PNP/PCI Configuration Setup allows you to configure the ISA and PCI devices installed in your system. This submenu appears if you select the option "PNP/PCI Configurations" from the main menu.

Frequency/Voltage Control ✍ Clock Spread Spectrum

Clock Spread Spectrum
Enabled
Disabled

This item is used to set clock spread spectrum for EMI testing. Normally, you don't need to change the default setting.

Frequency/Voltage Control ✍ Clock Speed Setup

Clock Speed Setup
66.8, 72, 75, 83.3, 90, 95, 100.2, 105, 107, 110, 112, 114, 117, 119, 121, 124, 125, 127, 129, 130, 133.6, 136, 138, 140, 145, 150, and 155 MHz.
x 3, x 3.5, x 4, x 4.5, x 5, x 5.5, x 6, x 6.5, x 7, x 7.5, and x8

The item is used to select the CPU clock speed.

3.10 Load Setup Defaults

The "Load Setup Defaults" option loads optimized settings for optimum system performance. Optimal settings are relatively safer than the Turbo settings. All the product verification, compatibility/reliability test report and manufacture quality control are based on "Load Setup Defaults". We recommend that you use this settings for normal operation. "Load Setup Defaults" is not the slowest setting for this motherboard. If you need to verify an unstable problem, you may manually set the parameter in the "BIOS Features Setup" and "Chipset Features Setup" to get slowest and safer setting.

3.11 Load Turbo Defaults

The "Load Turbo Defaults" option gives better performance than "Load Setup Defaults". It is provided for the convenience of power user who wants to push the motherboard to get better performance. Turbo setting does not go though all the detail reliability and compatibility test, it is tested only with limited configuration and loading (for example, a system that contains only a VGA card and two DIMMs). Use Turbo setting only when you fully understand the items in Chipset Setup menu. The performance improvement of Turbo setting is normally around 3% to 5%, depending on the chipset and the application.

3.12 Set Password

Password prevents unauthorized use of your computer. If you set a password, the system prompts for the correct password before boot or access to Setup.

To set a password:

1. At the prompt, type your password. Your password can be up to 8 alphanumeric characters. When you type the characters, they appear as asterisks on the password screen box.
2. After typing the password, press Enter.
3. At the next prompt, re-type your password and press again to confirm the new password. After the password entry, the screen automatically reverts to the main screen.

To disable the password, press when prompted to enter the password. The screen displays a message confirming that the password has been disabled.

3.13 Save & Exit Setup

This function automatically saves all CMOS values before leaving Setup.

3.14 Exit without Saving

Use this function to exit Setup without saving the CMOS value changes. Do not use this option if you want to save the new configuration.

3.15 Load EEPROM Defaults

Except "Load Setup Default" and "Load Turbo Default", you may also use "Save EEPROM Default " to save your own settings into EEPROM, and reload by using this item.

3.16 Save EEPROM Defaults

You may use this item to save your own settings into EEPROM. Then, if the data in CMOS is lost or you forget the previous settings, you may use "Load EEPROM Default " to reload.

3.17 How to Upgrade the BIOS

AOpen Easy Flash is more user friendly than traditional flash method. The BIOS binary file and flash routine are combined together and you simply run a single file to complete the flash process.

1. Download this self-extracting file and execute it to get the binary BIOS file, flash and checksum utilities.
2. Run "CHECKSUM MX3Wxxx.BIN" to see if the checksum of the downloaded file is exactly the same as indicated. If not, do the downloading again.
3. Save "AOFL170.EXE" and "MX3Wxxx.BIN" to a DOS floppy disk. Reboot your system with this disk without loading any memory handler (such as EMM386) or device driver to get as much free space as possible.
4. Execute A:>AOFL170 MX3Wxxx.BIN.
   DO NOT turn off the power during flashing process, until you are asked to!!
5. Reboot system and press "DEL" to enter BIOS setup, load "BIOS SETUP DEFAULT", then SAVE and EXIT. Done!

Note: *The upgrade of new BIOS will permanently replace your original BIOS content after flashing. The original BIOS setting and Win95/Win98 PnP information will be refreshed and you probably need to re-configure your system.*